

CATARH AND ITS CURE.

Rev T P Childs publishes to-day a wonderfully accurate description of the causes of Catarrh, and the results of an inattention to the first symptoms of this terrible disease. From the details given of his method of cure, it seems to be easily applied and very simple in its action. Inhalation is evidently the most rational and sensible way of reaching any disease of the air passages; Mr Childs' application of this principle in medicine, together with the knowledge of the inhalants to be used, have given him his wonderful success in the treatment of Catarrh and Bronchitis. To judge from the published statements of some of his patients, the medicine Mr Childs contrives to place, by the use of his inhalers, just where it is needed, must be most powerful and searching in its character to produce such surprising results. None need feel any hesitancy in placing their case in Mr Childs' hands for treatment. The number and character of the certificates, as well as the favorable notices from well known publishers, who have carefully examined the subject, must dispel every doubt in regard to his reliability. We would call especial attention to the advertisement, and request a careful perusal of the facts as set forth.—Adv

Business and Personal.

The Charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

National Steam Pump; best and cheapest. National Iron Works, New Brunswick, N. J.

Assays of Ores, Analyses of Minerals, Waters, Commercial Articles, etc. Technical formulae and processes. Fuller & Stillman, 40 & 42 Broadway, N. Y.

Kinball's Catarrh Cigarettes, an instantaneous relief and a pleasant smoke. They contain no tobacco.

80 H. P. Corliss Engine for sale low, by J. F. Bishop, New Haven, Conn.

The greatest improvement upon Turbine Water Wheels has recently been made by S. M. Smith, York, Pa.

C. M. Flint, Fitchburg, Mass., Mfr. of Saw Mills and Dogs, Shingle and Clapboard Machines. Circulars.

Wood-working Machinery, Waymouth Lathes. Specialty, Wardwell Patent Screw Bench; it has no equal. Improved Patent Planers; Elevators; Dowel Machines. Rollstone Machine Company, Fitchburg, Mass.

Valves and Hydrants, warranted to give perfect satisfaction. Chapman Valve Manuf. Co., Boston, Mass.

Artificial Stone.—Wanted to buy receipt for making. Address Wm. A. Morrison, Alton, Ill.

New Gear Cutting Attachment for Lathes. Lace Leather Cutter. Something new. Send for lists. Jackson & Tyler, Baltimore, Md.

Outfits for Nickel and Silver Plating, \$5 to \$200. Union Silver Plating Company, Princeton, Ill.

Send for Circulars of Indestructible Boot and Shoe Soles to H. C. Goodrich, 40 Hoyne Ave., Chicago, Ill.

For Sale cheap.—3 H. P. Yacht or Stationary Engine and Boiler, good as new. Aug. Franke, Wapakoneta, O. Cornice Machines; Parkin's Circular. Calvin Carr, 44 Center St., N. Y.

Save Fuel by using Steam Boiler Damper Regulator. National Iron Works, New Brunswick, N. J.

Emery.—Best Turkey Emery in bbls., kegs, and cases in quantities to suit. Greene, Tweed & Co., 18 Park Place, N. Y.

The unprecedented demand for Kinney Bros.' New Cigarette, Sweet Caporal, is a good recommendation as to their merit.

Kinney Bros.' New Cigarette, Sweet Caporal, fine, mild, and sweet, are becoming extremely popular everywhere.

Wanted.—Information of any improved method or machinery for making Vinegar. Address 909 N. 23d St., St. Louis, Mo.

Want—3 Singer Sewing Machines; 1 Watchman's Time Detector. Address Millstone, Indianapolis, Ind.

Nearly five acres of woodwork in the two immense dry goods stores of Messrs. A. T. Stewart & Co., of this city, are protected with H. W. Johns' Asbestos Fire-proof Paint. H. W. Johns Mfg. Co., 87 Maiden Lane, are sole manufacturers of genuine Asbestos Paints, Roofing, Boiler Coverings, etc.

Brown & Sharpe, Prov., R. I. Best Gear Teeth Cutters and Index Plates at low prices. Send for catalogue.

For Sale.—Brown & Sharp Universal Milling Machine; Cement Profiling Machine; first-class 2d hand Machine Tools. E. P. Bullard, 14 Dey St., New York.

Latest Improved Nut and Washer Machines under J. Noyes Smith's Patents; the only machine that makes hot pressed nuts without burring. York & Smith, Cleveland, Ohio.

For Sale.—7 foot bed Putnam Planer, \$350. A. A. Pool & Co., Newark, N. J.

Blake's Belt Studs; strongest, cheapest, and best fastening for Leather or Rubber Belts. Greene, Tweed & Co., New York.

Post Hand, Foot, or Power Band Saws, as good as the best, cut 7 1/2 in. thick; price \$35. G. W. Baker, Wil., Del.

Wanted.—By a first-class practical mechanic, draughtsman, and designer, a situation as foreman or superintendent of a machine shop. First-class references given. Address Lock Box 263, Woonsocket, R. I.

Our Imp. Steam Governor is far in advance of all others; prices reduced. Huntoon Gov. Co., Lawrence, Mass.

Bevins & Co.'s Hydraulic Elevator. Great power, simplicity, safety, economy, durability. 94 Liberty St., N. Y.

Circulars for Inventors and Manufacturers. Pamphlets on machinery, price lists, etc., written, illustrated, and printed; estimates furnished. Park Benjamin, Ph. D., Editor Appleton's "Cyclopaedia of Applied Mechanics," 37 Park Row, New York.

A Cupola works best with forced blast from a Baker Blower. Wilbraham Bros., 2,318 Frankford Ave., Phila. Shaw's Noise Quieting Nozzles and Mercury Pressure Gauges. T. Shaw, 915 Ridge Ave., Philadelphia, Pa.

For Steam Pumps send to Dean Bros., Indianapolis, Ind.

For Solid Wrought Iron Beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

Vertical Burr Mill. C. K. Bullock, Phila., Pa.

H. Prentiss & Company, 14 Dey St., N. Y., Manufs. Taps, Dies, Screw Plates, Reamers, etc. send for list.

A Great Bargain.—One new No. 1 14-inch 6 Roll Schenck Planing and Matching Machine. Belcher & Bagnall, 25 Murray Street.

Needle Pointed Iron, Brass, and Steel Wire for all purposes. W. Crabb, Newark, N. J.

Case Hardening Preparation. Box 73, Willimantic, Ct.

Hydraulic Elevators for private houses, hotels, and public buildings. Burdon Iron Works, Brooklyn, N. Y. Presses, Dies, and Tools for working Sheet Metal, etc. Fruit & other can tools. Bliss & Williams, B'klyn, N. Y.

Nickel Plating.—A white deposit guaranteed by using our material. Condit, Hanson & Van Winkle, Newark, N. J.

Galland & Co.'s improved Hydraulic Elevators. Office 206 Broadway, N. Y., (Evening Post Building, room 22.)

The Lathes, Planers, Drills, and other Tools, new and second-hand, of the Wood & Light Machine Company, Worcester, are to be sold out very low by the George Place Machinery Agency, 121 Chambers St., New York.

Hydraulic Presses and Jacks, new and second hand. Lathes and Machinery for Polishing and Buffing Metals. E. Lyon & Co., 470 Grand St., N. Y.

Solid Emery Vulcanite Wheels.—The Solid Original Emery Wheel—other kinds imitations and inferior. Caution.—Our name is stamped in full on all our best Standard Belting, Packing, and Hose. Buy that only. The best is the cheapest. New York Belting and Packing Company, 37 and 38 Park Row, N. Y.

Telescopes of all sizes manufactured; also telescopes carefully corrected and repaired at short notice. I have testimonials from Lewis M. Rutherford, 175 2d Ave., N. Y., certifying to the perfection of my telescopes. John Byrne, 314 E. 21st St., New York.

Warranted best and cheapest Planers, Jointers, Universal Woodworkers, Band and Scroll Saws, etc., manufactured by Bentel, Margedant & Co., Hamilton, Ohio.

Machine Diamonds, J. Dickinson, 64 Nassau St., N. Y.

Eagle Anvils, 9 cents per pound. Fully warranted.

The best Friction Clutch Pulley and Friction Hoisting Machinery in the world, to be seen with power applied, 95 and 97 Liberty St., New York. D. Frisbie & Co., New Haven, Conn.

Fine Taps and Dies for Jewelers, Dentists, and Machinists, in cases. Pratt & Whitney Co., Hartford, Conn.

For Sale.—4 H. P. Vertical Engine and Boiler (New York Safety Steam Power Co.'s make), as good, and in some respects better, than new. Address H. M. Quackenbush, Herkimer, N. Y.

The new "Otto" Silent Gas Engine is simple in construction, easy of management, and the cheapest motor known for intermittent work. Schleicher, Schumm & Co., Philadelphia, Pa.

Improved Steel Castings; stiff and durable; as soft and easily worked as wrought iron; tensile strength not less than 45,000 lbs. to sq. in. Circulars free. Pittsburg Steel Casting Company, Pittsburg, Pa.

Dead Pulleys that stop the running of loose pulleys and their belts, controlled from any point. Send for catalogue. Taper Sieve Pulley Works, Erie, Pa.

Vick's Illustrated Monthly Magazine is one of the most beautiful magazines in the world. Each number contains a chromo of some group of flowers, and many fine engravings. Published monthly at \$1.25 per year. Address James Vick, Rochester, N. Y.

Pulverizing Mills for all hard substances and grinding purposes. Walker Bros. & Co., 23d & Wood St., Phila., Pa.

Inventors' Models. John Ruthven, Cincinnati, O.

Sheet Metal Presses, Ferracute Co., Bridgeton, N. J.

The SCIENTIFIC AMERICAN Export Edition is published monthly, about the 15th of each month. Every number comprises most of the plates of the four preceding weekly numbers of the SCIENTIFIC AMERICAN, with other appropriate contents, business announcements, etc. It forms a large and splendid periodical of nearly one hundred quarto pages, each number illustrated with about one hundred engravings. It is a complete record of American progress in the arts.

NEW BOOKS AND PUBLICATIONS.

GUIDE TO ROSE CULTURE.—The Dinger & Conard Company of West Grove, Penn., have just issued their 1879 Annual, and like their previous ones it is copiously illustrated. It not only contains engravings of the choicest varieties of roses, but also of other flowering and ornamental plants. Messrs. Dinger & Conard have been growers of fine varieties of roses and ornamental plants for a number of years, and are reliable dealers. The guide is sent free to persons inclosing, with their address, a 3 cent stamp.



(1) C. Z. S. asks for the best method of putting water grates in a locomotive fire box. How is the pipe connected with the front and back end of the fire box? A. You can either expand the pipes at the ends, or screw them in, as is most convenient.

(2) A. S. asks how many sizes of pinions will run in an internal gear of 10 inches diameter. I want to run 24, the smallest three quarters of an inch, the largest 3 inches diameter. A. Fix upon some number of teeth in the internal gear that is a common multiple of the number of teeth in all the pinions. You will see then that the number of pinions is only limited by the practical difficulties of construction.

(3) R. B. R. writes: Several journals have stated that the locomotive lately built for the Atchison, Santa Fe, and Topeka Railroad was the heaviest ever built. The weight given is 118,000 lbs. Please inform your readers if this is correct. A. The "Janus," built at the Mason Machine Works, and in use on one of the Pennsylvania coal roads, weighs 84 tons. Possibly there may be an engine heavier still, and if so, we hope some of our readers will inform us.

(4) D. P. asks: What thickness must a cast steel cylinder 8 inches internal diameter have, so as to resist a steam pressure of 350 lbs. per square inch with complete safety? A. Half an inch will answer, unless the length is great.

(5) R. S. H. asks: If I build a boiler 36 inches in diameter, and the flues 30 inches in diameter, the iron in both being the same strength, and apply the

steam between the boiler and the flue, which will bear the greatest amount of pressure? A. The 36 inch shall.

(6) C. R. G. asks (1) if there is any difference in the friction of 2 equal lengths of hose, one to be laid straight and the other crooked. A. Yes, other things being equal, the difference will be considerable. 2. If water is forced into a 6 inch pipe from a 3 inch inlet, and after being forced from 500 to 600 feet and discharged from a 3 inch hose, will the water move faster in the center of the 6 inch pipe, or on the sides of the same, or will the water that is forced in act as a piston and make it all move the same? A. The action will be as described in the latter part of your question.

(7) R. E. W. asks for an explanation of the action of the wheels of a car when going round a turn or curve. One of the wheels (I think the outside) must make more revolutions in the same time than the other. How does the slower one make up with the other? A. In such a case, one of the wheels must slip, unless they are so coned that one is running on a longer circumference than the other, sufficient to allow it to pass over a greater distance with the same number of revolutions.

(8) C. H. M. H. asks: What constitutes an artesian well? My friend argues that it is necessary that the water should rise above the surface of the ground. I contend that if it reaches the surface it comes under the head of an artesian. A. It is the manner of sinking, not the nature of the flow, that makes a well artesian. The water may or may not reach the surface.

(9) J. E. F. asks: Which is the best for the Wabash, Mississippi, and Yellowstone rivers, a screw wheel, stern wheel, or side wheels? I am building a boat thirty-five feet long to carry eight persons and baggage, and I want to run good speed, for a pleasure trip up the Yellowstone river. What size should the engines be, and what should the boiler be, and would thirty-five feet be long enough, and how wide should it be? A. A screw will be preferable, if there is sufficient water. For dimensions of machinery, see SCIENTIFIC AMERICAN SUPPLEMENT, No. 158.

(10) W. C. asks: 1. Will it take the temper out of a steel casting or weaken it, under necessary heat to "shrink it on"? A. Yes. 2. In case it does, can a casting be "shrunk on" and tempered at the same time, or under one heating? A. Yes, but at the risk of breaking it.

(11) J. A. M. asks how to soften cast iron that is too hard for filing or drilling, so that it may be filed or drilled. A. Heat it to a cherry red, plunge it into powdered quick lime, and allow it to remain until cool.

(12) W. G. C. asks: 1. How can I drill a hole in a glass plate without danger of cracking the glass? A. Use as a drill a copper tube of the size of the required hole, and as it rotates keep it charged with emery and water. 2. Is American glass good enough for the plate of a "Holtz" electric machine? A. Yes. State your other questions more fully.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

C. S. W.—The ore does not contain silver, but much manganese and iron oxide. Properly powdered and washed it may have some market value on account of the manganese oxide which it contains.—J. E. R.—It is a fragment of quartz, or pebble that has been rounded by attrition.—E. G. O.—Please send larger sample of your ore.

Any numbers of the SCIENTIFIC AMERICAN SUPPLEMENT referred to in these columns may be had at this office. Price 10 cents each.

COMMUNICATIONS RECEIVED.

- On Pyrometers. By C. F. R.
Simple Electric Pen. By G. L. S.
Tide in Lake Superior. By H. J. W.
Culture of the Pear. By E. P. P.
New Patent Bill. Inventor.
On Ice Yachts. By H. B.
The Senate Patent Bill No. 306.
Patent Legislation. By W. F. S.
On the Progress of Chemistry in 1878. By E. G. H.
On Protection of Inventors' Rights. By V. B.
On Improvements in Cane Mills. By H. M. W.

OFFICIAL.

INDEX OF INVENTIONS

FOR WHICH Letters Patent of the United States were Granted in the Week Ending February 4, 1879, AND EACH BEARING THAT DATE. [Each marked (r) are reissued patents.]

A complete copy of any patent in the annexed list, including both the specifications and drawings, will be furnished from this office for one dollar. In ordering, please state the number and date of the patent desired, and remit to Munn & Co., 37 Park Row, New York city.

- Accordion, O. Stark..... 212,065
Alloy for metric gold coin, W. W. Hubbell..... 211,909
Alloys, etc., manufacture of, N. W. Williams..... 212,077
Amalgamator and settler, W. S. Shotwell..... 211,939
Anglometer, J. V. Capek..... 211,968
Automatic gate, Carter & Coppock..... 211,969
Axle box lid, car, J. Kinzer..... 211,851
Bag lock, W. Heller..... 212,001
Baggage fastener and shawl carrier, G. M. Young..... 212,082
Bait hook, spoon, L. S. Hill..... 211,906
Bale tie, T. M. McNeely..... 212,033
Bale tie, G. T. Pittman..... 211,925
Bale tie, G. A. Porter..... 211,927
Bale tie, T. R. Porter..... 211,926
Barrel crozing machine, W. L. Field..... 211,898
Barrel trussing machine, H. W. King..... 211,914
Basket, W. H. Gage..... 211,984
Bath tub, C. F. Wolters..... 212,081
Bathing apparatus, W. Wasson..... 211,874
Bed bottom, spring, A. Iske..... 212,009
Bedstead, wardrobe, D. A. & W. P. Green et al..... 211,844
Bee hive, D. W. Smith..... 211,869

- Binder, temporary, J. G. Smith..... 212,061
Bolt holder, M. Ketchum..... 212,013
Book cover protector, Way & Rankin..... 212,073
Boot and shoe heel attachment, W. L. Fink..... 211,983
Boot and shoe stretcher, C. D. Lahey..... 211,857
Boots, manufacture of, W. R. Miller..... 211,920
Bottle stopper fastener, W. Geist..... 211,987
Bottles, removable nozzle for, E. B. Requa..... 212,055
Box fastener, W. I. Winne..... 212,079
Bran, treating, R. L. Downton..... 211,977
Bridle winker, Cahoon & Teas..... 211,886
Bronzing wood, porcelain, etc., R. Boettger..... 211,961
Broom stock holder, D. A. Scott..... 211,935
Buggy seat, L. J. Annes..... 211,878
Burglar alarm, J. S. Ranney..... 212,053
Button, C. E. Bates..... 211,882
Button attacher, shoe, Wisner & House..... 211,950
Car door locker, freight, F. Cooper..... 211,972
Car heater, street, G. C. Bovey..... 211,963
Car lock, freight, B. Crawford..... 211,838
Car spring, J. A. Lowe..... 212,021
Carriage top, adjustable, North & Hubbard..... 211,861
Carriage window fastener, C. West..... 212,074
Cart, hand, M. Daley..... 211,889
Cartridge carrier, J. N. Reece..... 212,064
Caster for metals, H. W. Barnum..... 211,933
Chimney holder and air distributor, G. W. Thomas..... 211,945
Chuck, lathe, W. L. Sweetland..... 211,943
Churn lid, G. L. Farmer..... 211,980
Clay and cement pipes for drains, etc., N. U. Walker..... 212,072
Clock pendulum adjustment, G. B. Owen..... 212,045
Clock winding attachment, S. Serighelli..... 211,936
Cloth presser, J. Butterworth..... 211,966
Clothes drier, H. M. Jacobs..... 211,851
Coal assorter and washer, R. Hartley..... 211,846
Copies of writing, etc., producing, E. De Zuccato..... 211,877
Corn dropper and check rower, J. O. Hall..... 211,944
Corse cooler or casket, E. Holmes..... 241,907
Croquet scorer, W. B. Lewis..... 212,030
Cultivator and corn planter, Swartout & Hartley..... 211,871
Curtain fixture, J. K. Davison..... 211,890
Cut-off and valve, waste pipe, Levake & Grubb..... 211,917
Cutters, shaper for, J. A. Houlihan..... 241,908
Cylinder lubricator, steam, J. Barry..... 211,881
Dog power, A. Hamlin..... 211,904
Draught bar for sleighs, J. C. Campbell..... 211,967
Draw bar, W. Wimer..... 212,078
Drawing frame, H. C. Grayson..... 211,903
Drying machine, centrifugal, Chrystal & Walsh..... 211,971
Egg boiler, H. A. Manley..... 211,859
Egg preserver, W. & J. Inglis..... 212,007
Electric light regulator, Molera & Cebrian..... 212,040
Electro-magnetic engine, C. J. B. Gaume..... 211,965
Feeding sheep, rack for, A. C. Martindale..... 212,027
Fence barb, wire, C. P. Parker..... 211,863
Fence, barbed, J. Winterbotham..... 212,080
Fence, iron, T. Rogers..... 211,933
Fence, metal, J. B. Wickersham..... 212,075
Filter, C. Mæurer..... 212,023
Firearm magazine, R. S. Chaffee..... 211,877
Fire escape, W. Winkles..... 211,875
Fire extinguisher, A. Stoner..... 212,067
Flue cutter, J. H. McGraw..... 212,032
Fluid motor or motor engine, Molera & Cebrian..... 212,039
Fork and spoon, etc., A. B. Nott..... 212,044
Gas engine, J. H. Connelly..... 211,886
Gaslight extinguisher, A. Fulton..... 211,983
Gas, illuminating, A. P. Southwick (r)..... 8,567
Gearing, differential, R. Dutton..... 211,894
Glove show case, Smith & Traver..... 211,940
Grain separator, H. H. May..... 212,031
Grate, G. Jackson..... 212,010
Grinding mill, T. Bowman..... 211,964
Grinding mill, W. Peck..... 212,049
Grinding mill, A. H. Wagner..... 211,948
Gun, machine, B. B. Hotchkiss..... 211,849
Hame loop, P. & W. B. Hayden..... 211,998
Harrow, E. Murray..... 212,043
Harrow, adjustable, W. D. Fink..... 211,981
Harvester rake, L. Miller (r)..... 8,565
Harvester rake attachment, L. Miller (r)..... 8,564
Harvesting machine, W. F. Olin..... 211,882
Hat presser, A. Solmans..... 212,063
Heater, steam, A. Annan..... 211,879
Hinges, gravity catch for, B. G. Fitzbugh..... 211,900
Hoisting register, H. C. Behr..... 211,888
Honey box for bee hives, J. M. & H. B. Parker..... 212,047
Horse boot and weight, J. H. Fenton..... 211,897
Horse toe weight, J. H. Fenton..... 211,840
Horseshoe, R. Pruessing..... 211,930
Horseshoe pad, W. A. Taylor..... 212,069
Horseshoer's rasp, C. H. Perkins..... 211,864
Hose, electric signal fire, J. Buchtel..... 211,833
Hot air bath apparatus, T. Keech..... 212,011
Hot air register, J. W. Collins (r)..... 8,570
Hub attaching device, M. L. Green..... 211,990
Hub, vehicle wheel, J. A. Mackinnon..... 211,858
Hulling machine, Hutchinson & Hubbell..... 212,005
Kettle, steaming, C. & F. Halstead..... 211,845
Key box, safety, F. Imhaeuser..... 212,006
Knitting machine loop wheel, J. Bradley..... 211,831
Ladder, combination, W. C. Phillips..... 212,050
Lamp, W. M. Jackson..... 211,850
Lamp, F. Rhind..... 211,931
Lamp extinguisher, R. H. Frazee et al..... 211,902
Lamp, paraffine or mineral oil, W. C. Hughes..... 212,003
Lantern, carriage, C. J. Koefoed..... 211,915
Latch, J. Kinzer..... 211,853
Lawn sprinkler, Wolff & Stein..... 211,876
Leather cutter, E. Fisher..... 211,841
Lifting jack, A. S. Dinsmore..... 211,891
Lightning rod, J. Hewitt..... 211,847
Liniment, R. Banes..... 211,830
Lock, Brooks & Munger..... 211,832
Lock, Smith & Egge..... 212,059
Lock and latch, A. Proseus..... 212,052
Loom, circular, C. P. Marshall..... 212,025
Loom for weaving pile fabrics, W. Webster..... 211,949
Mainspring safety device, S. W. Morgan..... 212,042
Marble veneering, artificial, T. Swartwout..... 212,068
Metallic and non-metallic box, J. C. Blissard..... 211,884
Micrometer screw gauge, G. W. Dickinson..... 211,975
Mill staff gauge, J. Miltenberger..... 211,922
Moulding tubular articles, S. J. Adams..... 211,951
Motor, Molera & Cebrian..... 212,038
Motor engine, Molera & Cebrian..... 212,037
Mower, W. D. Paxton..... 212,048
Mowing machine, A. Tornquist..... 211,946
Oil, rubber, Scott & McCumber..... 212,066
Ore separator, P. Plant..... 212,051
Ore washer and amalgamator, C. Duhem..... 211,893
Ordnance lining tube, S. Crispin..... 211,839
Organ, pipe, J. Gratian..... 211,989
Oven, shelf, J. A. Lawson..... 211,916
Packing, piston, J. H. Van Riper..... 211,873
Packing, piston rod, T. Tripp..... 211,947
Paddlewheel, feathering, E. E. Kilmer..... 212,014
Padlock, permutation, M. B. Mills..... 212,036
Paint and oil drier, A. W. Pratt..... 211,928
Paper bag machine, E. W. Goodale (r)..... 8,568
Paper folder, R. M. Hoe..... 211,848
Paper, manufacture of, J. O. Gregg..... 211,991

Table of advertisements with prices, including items like Paper for embossing, Paper stencils, Peg cutter, and various mechanical parts.

Table of Trade Marks, listing items like Bacon, hams, beef, pork, lard, and tallow, along with their respective prices.

Table of Designs, listing items like Baskets, Heel plates, Knitted fringe, and Oil cloth, along with their respective prices.

Advertisements. Inside Page, each insertion --- 75 cents a line. Back Page, each insertion --- \$1.00 a line.

Allen's Useful Companion AND ARTIFICERS' ASSISTANT. THE KING OF BOOKS! Size 8 1/2 x 6 inches; contains more than 700 large, closely printed pages.

FOR SALE.—LETTERS PATENT OF Willde's Celebrated Noiseless Self-setting Rat and Mouse Traps.

CASTINGS. Soft, Strong and Smooth Iron or Brass Plain, Galvanized, Bronzed or Nickled to order promptly.

ROOF PAINTING. For \$5, by Post Office Order we will send you the recipe for making Langhorne's English Gum Coating Paint.

TEN THOUSAND STEAM ENGINE Owners Wanted to gain power, save fuel, and get steadier motion by using the Improved Slide Valve.

SAVE A DOLLAR! The Egyptian Fever, Ague, and Liver Pad is without exception the best Pad in existence.

PATENTS. Caveats, Copyrights, Trade Marks, Etc. Messrs. Munn & Co., in connection with the publication of the Scientific American, continue to examine improvements.

TRADE MARKS. Bacon, hams, beef, pork, lard, and tallow, J. W. Nightingale. Baking powders, E. Guttard. Canned fruits, vegetables, and meats, San Jose Fruit Chocolate, H. L. Pierce.

A Rare Opportunity, on Easy Terms. To be sold at Auction, at Charleston, South Carolina, on Tuesday, the first day of April, 1879, the Taylor Iron Works, complete and in operation, together with all stores, stock, and work on hand on day of sale.

SCROLL SAWS, Small Tools, Bellamy Chucks, etc. Send stamp for large catalogue, G. Webster Peck, Manuf'rs' Agent, 110 Chambers Street, New York.

Lathes, Planers, Shapers Drills, Bolt and Gear Cutters, Milling Machines. Special Machinery. E. GOULD & EBERTHARDT, Newark, N. J.

WHEELER'S PATENT WOOD FILLER fills the pores of wood perfectly, so that a smooth finish is obtained, with one coat of varnish. Send for circular.

FOR SALE.—A patent Fan Attachment for Sewing Machines; also, a patent arrangement for drawing Mosquito Bars. For particulars, address I. A. Abbot, Natchez, Miss.

LAP WELDED CHARCOAL IRON Boiler Tubes, Steam Pipe, Light and Heavy Forgings, Cotton Presses, Rolling Mills and Blast Furnace Work.

READING IRON WORKS, 261 South Fourth St., Phila.

YELLOW FEVER CHART.—A weather and death rate record of the great epidemic of 78 in N. O. price, postpaid, fifty cents. JNO. F. DEEVES, Box 506, N. O.

THOMAS'S CONCENTRATED DYE Stuffs. (138 Recipes sent gratis.) (See Scientific American Supplement, March 15, 79. Address N. SENEKER THOMAS, Elmira, N. Y.)

CENTENNIAL AND PARIS MEDALS. Mason's Friction Cutlery and Elevators. "New and Improved Patterns." 20 per cent. off list.

HOW TO SELL PATENTS.—This little book fully explains how all patents can be sold for good prices. Price 50 cents. L. D. SNOOK, Barrington, Good Co., N. Y.

140 page Book and 50 finely printed Visiting Cards by W. N. GRIFFIN, Norfolk, Va., for 50c.

CHEMICAL ANALYSES OF ORES, WATERS, FERTILIZERS, coals, &c. P. T. Austin, New Brunswick, N. J.

PRACTICAL INFORMATION for the Workshop and the Household. Contains the cream of all the most valuable recipes found in the large books and encyclopedias. 3,000 copies sold since Oct., 1878.

FOR TEN DOLLARS CASH, we will insert a seven-line advertisement one week in a list of 269 weekly newspapers, or four lines in a different list of 337 papers, or ten lines two weeks in a choice of either of four separate and distinct lists containing from 70 to 100 papers each, or four lines one week in all four of the same lists, or one line one week in all six lists combined, being more than 1,000 papers.

50 Perfumed Chromo and Motto Cards, 10c. Name in Gold and Jet. Seavy Bros., Northford, Ct.

FOR EXPANDING MANDRELS, both for Machinists and Amateurs, send for circular to C. W. LE COUNT, South Norwalk, Conn.

FOR SALE.—A MACHINE WORKS, in a city of this State of 100,000 inhabitants. This shop, which is one of the best known in the State, is now running, and has been for 23 years, successfully, and has made a fortune for its owner.

Wood-Working Machinery, Such as Woodworth Planing, Tonguing, and Grooving Machines, Daniel's Planers, Richardson's Patent Improved Tenon Machines, Mortising, Moulding, and Re-Saw Machines, and Wood-Working Machinery generally.

Send for our Priced and Illustrated Catalogues. Part 1st.—Mathematical Instruments, 160 pages; contains list and prices of Drawing Instruments, Drawing Materials, Pocket Compasses, Surveying Compasses, Engineers' Transits and Levels, Surveying Chains, Tape Measures, Pocket Rules, and Books relating to Drawing, Engineering, and Mechanics.

DEOXIDIZED BRONZE (Patent), superior to Phosphor-Bronze or any alloy of Copper and Tin made by any other process.

ELECTRO-BRONZING ON IRON. (New Patent). Indestructible and unchanging by atmospheric action. Use of these patent rights can be obtained on favorable terms.

MACHINERY AT VERY LOW PRICES. 2d hand Lathes, Drills, Planers, Hand Tools for Iron Work, new Woodworth Planing Machines, Resawing, Tenoning, Moulding Machines, Scroll Saws, Portable Steam Engine. Jos. R. Blossom, Ass't, Matteawan, N. Y.

THIRTY-FOURTH ANNUAL REPORT OF THE NEW YORK LIFE INSURANCE COMPANY

OFFICE: Nos. 346 & 348 Broadway.

JANUARY 1 1879.

Amount of Net Cash Assets, Jan. 1, 1878, \$34,452,905 29

REVENUE ACCOUNT. Premiums received and deferred, \$6,121,856 04. Less deferred premiums Jan. 1, 1878, 396,289 26.

DISBURSEMENT ACCOUNT. Losses by death, including Reversionary additions to same, \$1,087,675 61. Endowments matured and discontinued, including Reversionary additions to same, 673,051 14.

ASSETS. Cash in bank, on hand, and in transit (since received), \$932,839 48. Invested in United States, New York City, and other stocks (market value \$15,415,105 34), 14,791,267 72.

Automatic Fire and Water Alarms. FOR SALE.—Rights to introduce the above patents of this company in England, France, Canada, or in the States and Cities throughout the United States.

CASH ASSETS, Jan. 1, 1879, \$36,837,295 23. Appropriated as follows: Adjusted losses, due subsequent to Jan. 1, 1879, \$399,486 68. Reported losses, awaiting proof, etc., 180,993 39.

Surplus, estimated by the New York State Standard at 4 1/2 per cent. over \$6,500,000 00. From the undivided surplus of \$2,811,436 64 the Board of Trustees has declared a Reversionary dividend to participating policies in proportion to their contribution to surplus, available on settlement of next annual premium.

TRUSTEES. MORRIS FRANKLIN, ROBERT B. COLLINS, CHAS. WRIGHT, M.D., J. F. SEYMOUR, JOHN MAIRS, DAVID DOWNS, HENRY BOWERS, JOHN M. FLEMING, WILLIAM A. BOOTH, WILLIAM H. BEERS.

MORRIS FRANKLIN, President. WILLIAM H. BEERS, Vice-President and Actuary.